

ABSTRACT

Method and composition for detecting one or more selected polynucleotide regions in a target polynucleotide. In one embodiment of the invention, a plurality of different-sequence probe pairs are added to a target polynucleotide, where each probe pair includes two polynucleotide probe elements which are complementary in sequence to adjacent portions of a selected one of the target sequences in the target polynucleotide. In each probe pair, one of the probe elements contains a non-polynucleotide polymer chain which imparts a distinctive mobility to the associated probe pair, when the elements in the pair are ligated. The other element in the pair contains a detectable reporter label. After the probe pairs have been allowed to hybridize with the target polynucleotide, the hybridized polynucleotides are treated under conditions effective to ligate the end subunits of target-bound probe elements when their end subunits are base-paired with adjacent target bases. The ligated probe pairs are then released from the target polynucleotide and separated electrophoretically in a sieving matrix, or chromatographically.